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ABSTRACT

A study examined whether children increased their vocabularies as a result of hearing unfamiliar words within the oral context of a story and observed the oral strategies the children employed as they attempted to define a new word. Subjects, 64 males and 64 females, were from self-contained third-grade classrooms in public schools in a small town in the northwest. They were divided into experimental and control groups. An oral posttest measured the extent to which children acquired meaning through oral context. Oral context consisted of listening to a tape of the children's books, "Solomon the Rusty Nail" and "The Legend of the Veery Bird." The posttests were scored for word meaning and for sentence recognition. Results indicated that the children who heard the story from which the words and sentences were taken had a better understanding of those words and recognized sentences from that story better than the children who had heard the other story. Gender was also a significant source of variance for both stories. The posttest scores of males were significantly higher than those of the females. Findings suggest that the process of meaning acquisition does begin with the first encounter with an unfamiliar word within the context of a children's book. In this study, recognition of a sentence from the story indicated a step in the process of the development of word meaning. (One figure, five tables of data and 31 references are attached.) (RAE)

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The incidental acquisition of word meaning through oral context

By

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The incidental acquisition of word meaning through oral context

The ability to learn language is regarded as one of the most basic human accomplishments. Language is the fundamental means by which people communicate ideas and emotions. From the birth cry to the adult capacity to precipitate change through symbols, the speech and language of the child are nurtured by virtually every contact provided by his or her culture. Language, whether heard, spoken, read, or written, is the key to human communication.

Successive waves of research since 1960 have studied three different aspects of linguistic development: syntax, the rules for putting words together into sentences; pragmatics, the rules and reasons of language use; and semantics, the mapping of meaning onto words (Chapman, 1982). While both syntax and pragmatics are interesting aspects of linguistics, it is semantics that is of particular concern in the study of vocabulary development.

Because of their relationship to reading, two aspects of semantics, meaning acquisition, the gradual mapping of meaning onto words, and vocabulary development, the system of recognizing and using words, are topics of considerable research. Meaning acquisition for preschool children appears to be a gradual process dependent upon several exposures to a new word that are supported by concrete referents (Carey, 1978; Rice, 1978). In older children, this task is related to reading

and reasoning skill (McKeown, 1985). Little is known about the process of meaning acquisition as an immediate effect of the oral context of a children's book.

Vocabulary development can be enhanced through certain instructional methods (Gipe & Arnold, 1979; McKeown, 1985). However, many direct methods of vocabulary instruction that have been effective in increasing vocabulary knowledge of specific words have had no consistent effect on reading comprehension and may take more instructional time than is warranted, considering the effects (Tuinman & Brady, 1974; Pany & Jenkins, 1977). Jenkins and Dixon (1983) concluded from their synthesis of vocabulary research that a way of teaching large amounts of vocabulary in an economical time frame was needed.

The majority of research regarding vocabulary, methods of increasing vocabulary, and the relationship between vocabulary and reading is conducted using subjects older than eight or nine. Exactly what type of vocabulary instruction would be the most beneficial to young children is unclear. In an analysis of 52 vocabulary studies conducted by Stahl and Fairbanks (1986), only two studies involved second grade students, one study involved third grade children, and none utilized first grade students. Clearly, there is a need for more vocabulary research at the primary level.

Research in the areas of meaning acquisition, the relationship between vocabulary and reading, direct vocabulary instruction, the acquisition of meaning from written context,

and the role of oral language in vocabulary development provide background information for hypotheses concerning how children learn word meaning and what facilitates or improves vocabulary growth.

It has been concluded that semantic features of words are learned in a gradual manner (Phelps-Tersaki et al., 1983) and that personal experience is a key factor in meaning acquisition (Gray & Holmes, 1938). Chambers (1904) and Beck (1979) reported that vocabulary growth proceeds in a linear trend from no understanding of a new word to vague understanding and finally to correct understanding of meaning.

Carey (1978) and Rice (1978) researched the development of word meaning with nursery school children and concluded that this natural process develops slowly and is context dependent. McKeown (1985) assessed the process of meaning acquisition in older children and found that reading skill was a factor in the ability of children to reason the meaning of nonsense words from successive clues.

The relationship between vocabulary competence and reading comprehension was established by research as early as 1917 (Stahl & Fairbanks, 1985). Vocabulary is related to the major ideas in a text (Anders & Vos, 1986) and affects sentence comprehension and reading speed (MacGinitie, 1976). Loban (1963) concluded that superiority in reading was related to superiority in language ability.

However, several studies that have succeeded in improving vocabulary knowledge have not succeeded in improving reading comprehension (Lieberman, 1967; Tuinman & Brady, 1974; Pany & Jenkins, 1977). Direct instruction in vocabulary fosters an understanding only of a small number of words (Beck et al., 1980) and occurs seldom in the school day (Durkin, 1979).

It has been shown than silent reading accounts for at least part of the large increases in vocabulary size during the school years (Nagy et al., 1984; Jenkins et al., 1984). However, written context infrequently reveals complete word meaning (Deighton, 1959). Vocabulary growth through context is a gradual process following a developmental pattern that improves with age, general knowledge, and reasoning ability (Werner & Kaplan, 1952). While silent reading may facilitate vocabulary growth for older students, it is unlikely that many children in the primary grades could efficiently improve their vocabulary size with this method.

Being surrounded by and participating in oral language must be considered a source of vocabulary growth and the development of word meaning. Language development is well advanced by the time a child enters school (Norton, 1985). Specifically, the value of listening to literature as a method of vocabulary and language development has been reported by Bellon (1975), McCormick (1977), and Vail (1977). However, the effects of reading aloud to children typically have been measured over long

periods of time and focus on general vocabulary development (D. H. Cohen, 1968; Chomsky, 1972).

Unlike direct instruction, reading to children not only stimulates vocabulary growth, but also has an effect on the ability of children to comprehend what they read (Raftery, 1974). In oral presentations of a story, students are introduced to vocabulary beyond their normal reading capacities (Frick, 1986). Unfamiliar words are presented within a familiar context, often with visual support from illustrations. Clues as a result of auditory and visual perception may enable children to focus on, rather than overlook, new vocabulary. The prosodic features of speech lend additional support for unfamiliar words.

No studies that specifically dealt with the role of oral literature in the immediate process of meaning acquisition of specific words were revealed by the review of literature. The focus of the present study was to assess the influence of reading aloud to children in the incidental development of word meaning. Whether or not the process of meaning acquisition begins with the first experience with an unfamiliar word within the context of a story was measured.

Statement of the Problem

The purpose of this study was twofold: to determine whether children increased their vocabularies as a result of hearing unfamiliar words within the oral context of a story and

to observe the oral strategies they employed as they attempted to define a new word.

Method

Subjects

The study was conducted in a small town in the Northwest. The population consisted of all the students in self-contained third grade classrooms in the public schools, excluding children who were mainstreamed from special education or who had been identified as having a hearing loss.

A proportionate, random sample of 64 males and 64 females was drawn. Males and females were then randomly assigned to one of two groups for the study.

Instrumentation

Since the research question for this study focused on meaning acquisition as a result of the oral experience of hearing a book read aloud, two children's books were selected for use in the research: Solomon the Rusty Nail by William Steig and The Legend of the Veery Bird by Kathleen Hague. Both books met three predetermined criteria: each had a copyright date of the current year, could be read in one sitting, and was given a recommended review in a professional journal. The posttest measure was constructed specifically for these two books.

The Oral Posttest

The oral vocabulary posttest designed for this study consisted of two parts: a measure of word knowledge and a measure of sentence recognition. The administration and scoring of the oral posttest was modeled after the vocabulary measure used in the Wechsler Intelligence Scale for Children-Revised (WISC-R). The vocabulary portion of the WISC-R is designed to measure receptive vocabulary and it was the similar intent of this research study to measure receptive vocabulary. Depending on the accuracy and sophistication of their answers, it was possible for the children to receive a score ranging from 0 to 3 for each of the vocabulary words and a score of either 0 or 1 for each sentence.

Two readers with expertise in children's literature read the books selected for the study and listed all the words they felt would be unknown to children in the beginning of the third grade. The lists were combined and any words not listed by both readers were discarded. Words that appeared more than once in one million words of running text were also omitted (Carrol et al., 1971). Following a pilot study, the vocabulary words known to children in the control group for each book were deleted from the final posttest measure. Six placebo words were added to the list of vocabulary words to facilitate the establishment of rapport with the subjects.

The sentences in both books containing a vocabulary word selected for the research were numbered. Three sentences were

randomly chosen from each of the books selected for the research. A copy of the posttest is given in Figure 1.

Insert Figure 1 about here

Data Collection

A pilot study with third grade children in a self-contained classroom was conducted. The purpose of this pilot study was twofold: (1) to serve as a final step in determining that the words used in the oral posttest were unknown to children and (2) to establish the reliability of the measurement device. Internal consistency was determined using split-half reliability. The reliability coefficient was corrected to .781 for the oral posttest using the Spearman Brown Prophecy formula.

For the remainder of the research, children in the sample were taken, in groups of four or less, with the researcher to an isolated setting within their schools. The children heard a tape of either Solomon the Rusty Nail or The Legend of the Veery Bird. Pictures on each page of the story were briefly shown to the children as they listened to the story.

Tapes were made of the students' individual, oral posttests. The order in which the children in the small groups were tested was manipulated so that an approximately equal number of males and females were given the oral posttest in one of the four posttest orders.

All of the children were given the entire posttest but their posttest scores were separated into two sections: a total score for the ten words and three sentences from Solomon the Rusty Nail and a total score for the ten words and three sentences from The Legend of the Veery Bird. The posttest scores on the words and sentences from Solomon the Rusty Nail were entered as experimental group scores for children who heard that story. Their scores from the remaining half of the posttest containing words and sentences from The Legend of the Veery Bird were entered as control group scores to be compared with the experimental group who listened to the The Legend of the Veery Bird.

A random sample of the posttests were scored blind with respect to condition. Interrater reliability was .985.

Data Analysis

The data from the study were analyzed in two separate procedures using analysis of variance. The vocabulary posttest scores were compared on the basis of group (experimental or control) and gender for the experimental and the control group for each of the two books used in the study. The effect of the order of the individual posttest was measured with analysis of variance on the basis of group (experimental or control) and posttest order (first, second, third, or fourth). Interactions and/or main effects were tested for significance at the .05 level.

Design

A 2 x 2 (gender by group) factorial design was selected to determine the effects of oral context on meaning acquisition and vocabulary development. In a cross-over design modeled after the experimental research described by Nagy et al. (1984), each group served as the experimental group for one book and the control group for the other book simultaneously. A 1 x 4 (group by order) factorial design was chosen to measure the effect of the order of the posttest on the student's score.

Results

Acquisition of Word Meaning

The oral posttest measured the extent to which children acquired word meaning through oral context. In this study, oral context consisted of listening to a tape of a children's book. The posttests were scored for word meaning and for sentence recognition.

Results for Solomon the Rusty Nail

For Solomon the Rusty Nail, both group and gender were sources of significant variance. Subjects in the experimental group scored higher on the oral posttest than did those in the control group. Males scored higher on the oral posttest than did females. There was no significant gender by group interaction. The data are presented in Tables 1 and 2.

Insert Tables 1 and 2 about here

Results for the Legend of the Veery Bird

Group membership was a source of significant variance for the students being compared on the portion of the oral posttest from The Legend of the Veery Bird. The subjects in the experimental group scored higher on the oral posttest than did the children in the control group.

There was also a significant difference between the scores of males and females on the portion of the oral posttest from this book; the males scored higher. There was no significant group by gender interaction. The data are given in Tables 3 and 4.

Insert Tables 3 and 4 about here

Posttest Order Effects

The oral posttest was administered to children in one of four orders. To determine the effect of the order in which children were given the posttest, the posttest scores were compared for males and females in the experimental groups for each of the two children's books.

There were no significant differences between the means for the four orders of the children in the experimental group who heard Solomon the Rusty Nail. Whether or not the children were

given the posttest immediately following the story or were given the posttest up to 30 minutes later had no consistent effect on the posttest scores for either males or females.

These results were replicated for the experimental group of the children who heard The Legend of the Veery Bird. There were again no significant differences between the mean scores of the children for any of the four posttest orders. The means and standard deviations for order are given in Table 5.

Insert Table 5 about here

Conclusions

For both Solomon the Rusty Nail and The Legend of the Veery Bird, children in the experimental groups scored significantly higher on the posttest measure than did children in the control groups. The means of the two group indicated that the children who heard the story from which the words and sentences were taken had a better understanding of those words and recognized sentences from that story better than the children who had heard the other story. While the differences in means were small in absolute numbers, they were significant. The children only heard each of the books once and were not alerted to the nature of the task before they heard the story.

Gender also was a significant source of variance for both Solomon the Rusty Nail and The Legend of the Veery Bird. The posttest scores of males were significantly higher than those of

females. Because the statistical results for this research were quite similar for both of the books selected for the study, the conclusions are strengthened.

There was no significant group by gender interaction for either book used in the research study. The order in which individual children were given the oral posttest was controlled by the researcher. Whether or not the children were given the posttest immediately after hearing the story, or between 20 and 30 minutes later, the variation in the posttest scores was attributed to chance.

Discussion

It appears that the process of meaning acquisition does begin with the first encounter with an unfamiliar word within the context of a children's book. For this research study, recognition of a sentence from the story indicated a step in the process of the development of word meaning.

The children in the sample were very adept at "sorting out" which sentences were from the story they had heard. Several of them stated precisely <u>where</u> the sentence had been in the story. Most of the children were capable of identifying the distractor sentences also. As one child said, "Oh, no! There weren't any cats in <u>that</u> book!"

While many children easily identified sentences from the books, when tested on isolated words from those same sentences, they often indicated that they had never heard the particular

word before. Children are very "context dependent" in the early stages of meaning acquisition and as Stahl and Fairbanks (1986) reported, only after several exposures to a word do they become "decontextualized." The importance of context was evident for a student who was given "embers" to define. The child sat very still for a time, and then said, "It's like amber waves of grain. I had to sing the song to myself first."

Two children used the story itself in their definition. One said that "phosphorescent" was "Waves in the ocean," and another stated that "refuge" was "A place in the forest to feel safe." Children in the third grade are in a stage of rapid language development (Durkin, 1979). They are sensitive to new words and will take chances on giving definitions. While many of them did not know the words selected for the study, they felt that these words were not total strangers. When defining unfamiliar words, children rely heavily on morphological clues.

The recognition of morphemes is developmental and children vary in their ability to isolate recognizable meaning-bearing units in speech (Reich, 1986). "Tactless" was a word that elicited an example of this approach. One child said, "Take a tack out, then it's tactless." Another said, "On a football team when you tackle, it's tactless." A girl stated, "When no one is attacking you, you say you're tactless." Another example of a morphological approach was, "If you're a football player and you sign up for the kind where you don't have to tackle." Others stated, "An animal who doesn't attack," and "Your taxes."

Children identified an apparent base word (tack, tackle, tax) and determined, with varying degrees of success, the influence of the suffix -less on word meaning.

The word "embedded" was another that children defined by root words and affixes. Answers included, "When you have no bed," "When you're not in bed," and "When you're lazy and won't get up."

Gray and Holmes (1938) concluded that personal experience was the basis of vocabulary development. Many children in this study identified word meanings based on their own experiences. This was particularly evident in the example given for the word "intention." Several children defined instead the word "detention," a concept very familiar to many grade school children. One boy said, "When you're bad and flip up girls' dresses, you go into intention." Another child drew on her own experiences when she indicated that "distraught" was a word that she had heard her cousin say about her horse.

Children in the sample tended to give examples of, rather than definitions for, words. One child defined "smug" as, "When you're in water and go by weeds, you get smugged in it." For "instinctively" a girl said, "Your parents think you did really well, they say 'She's instinctive.'" When defining "intention", one child gave this example: "When you're supposed to be at attention and you aren't, you're intention." These findings support Chapman's (1982) contention that American children shift

from functional (what something does) to categorical (what something is) definitions of words as they get older.

Children also defined words that sounded similar to or rhymed with the words identified for the research. For "instinct" a child said, "If you're going to say something that's serious, you say, "'that's extinct'." "Smug" was defined as "to hit someone" (slug), and "to be cozy in bed" (snug). "Embers" was defined as "jewelry" (emeralds), "emeralds," and "a color" (amber). In this study, children often had incorrect understandings of the words on the posttest. This tendency for vocabulary development to move from wholly incorrect understanding to mastery was reported by Chambers (1904).

Petty and Jensen (1980) concluded that there were significant differences in the vocabulary development of individual children. A few children in this study were very precise in giving definitions. A boy defined "refuge" as, "A bunch of people in Africa or Asia. They need help. They're in the dry season and they need water and a bunch of people are dying and you can adopt them if you see the ad on T. V." "Intention" was succinctly defined by one child as, "When you get an urging to do something." One child exemplified a unique understanding of words when asked if he knew what "tawny" meant. He answered, "It's just a name; it doesn't mean anything."

Children attempted to supply correct tenses to unfamiliar words. Examples of this include: "smugged," "to feel "intense" for "intention," and the answer that "rapture" meant "to

raptch." These "rule governed" tendencies have been reported by Braine (1965). Children nearly always gave answers in the second person singular. They typically included "you" and never "I" in their examples.

Boys and girls were dissimilar on their performance of the tasks designed for the research. This may be because the boys were more likely to guess or take chances on word meanings. J. Dillon (1982) reported that boys were more aggressive and active in the classroom; girls were more conforming and quiescent. Dweck et. al (1978) concluded that boys are praised more often for performance and girls more often for neatness. Perhaps the girls in the sample were more cautious about stating what they knew.

Furthermore, both stories had male protagonists and the female pronouns "she" and "her" did not appear in any of the sentences on the posttest. Since only two books were chosen for the study, perhaps the stories were more appealing to boys. Gender accounts for significant differences in preferences in literature (Closer, 1959; McGhee, 1979).

The time differences had no consistent influence on scores. Since all of the children had experienced the story, they had a common reference point. They not only had heard the story, they also had seen the accompanying pictures. Artwork in picture books extends and supports the text (Sutherland & Arbuthnot, 1986). Both of the books chosen for this research contained

vivid pictures on every page that lent support for sentences and unfamiliar words.

Recommendations

The findings and conclusions of this study have implications for parents, teachers, curriculum specialists, and teacher educators. Based on this study these recommendations are made:

1. Children should be read to daily. They should be provided with many exposures to the colorful and challenging language of quality literature.
2. Vocabulary study should begin with an experience from which children can draw. Words should be presented in a familiar, supportive context.
3. Children should have opportunities to test their own abilities to derive word meanings. They should be encouraged to verbalize their ideas and become involved in discussions with classmates and the teacher.
4. Further research should be conducted involving children from other grade levels. More studies are needed that deal with children in the primary grades. Many children at this level cannot derive word meanings from text on an independent basis and other sources that enhance meaning acquisition need to be emphasized.

5. Only two children's books were selected for use in this research. Additional studies involving a variety of genres of literature are suggested.
6. A follow-up study should be conducted that involves storytelling. A real, live person is much more powerful than a voice on a cassette tape.

Figure 1

Oral Posttest

	Word	Points		Word	Points
1.	carnivore	_____	1.	timid	_____
2.	reveled	_____	2.	refuge	_____
3.	embers	_____	3.	astounded	_____
4.	embedded	_____	4.	tangible	_____
5.	tactless	_____	5.	tawny	_____
6.	indelibly	_____	6.	rapture	_____
7.	intention	_____	7.	phosphorescent	_____
8.	scut	_____	8.	smoldering	_____
9.	snug	_____	9.	instinctively	_____
10.	chard	_____	10.	beckoned	_____

11. He had no intention of serving as dinner for two stupid cats.

12. Then that tricky rascal would turn up out of no where, looking smug and innocent.

13. Sometimes the world looked so beautiful he felt satisfied just being a tiny part of it, even embedded in wood.

Total _____

11. As soon as the moon rose, he was amazed to see tawny feathers covering his body.

12. He rushed from the house, seeking again the familiar refuge of the forest.

13. The winds rushed by his face, and crisp air filled his lungs with rapture.

Total _____

Table 1

Analysis of Variance for Group and Gender
for Solomon the Rusty Nail

SOURCE	SUM OF SQUARES	D F	MEAN SQUARE	F
Group	290.85	1	290.85	69.46*
Gender	19.17	1	19.17	4.58*
G x G	6.63	1	6.63	1.58
Error	498.28	119	4.18	

* p <.05

Table 2

Means and Standard Deviations
for Solomon the Rusty Nail

Group	n	Mean	SD
Exper			
Males	29	5.45	2.31
Females	31	4.19	1.73
Control			
Males	32	1.91	1.97
Females	31	1.58	1.43

Table 3

Analysis of Variance for Group and Gender
for The Legend of the Veery Bird

SOURCE	SUM OF SQUARES	D F	MEAN SQUARE	F
Group	168.69	1	168.70	16.72*
Gender	59.95	1	59.95	5.94*
G x G	22.70	1	22.71	2.25
Error	1200.91	119	10.09	

* p <.05

Table 4

Means and Standard Deviations
for The Legend of the Veery Bird

Group	n	Mean	SD
Exper			
Males	32	6.03	4.53
Females	31	3.77	2.17
Control			
Males	29	2.83	3.35
Females	31	2.29	1.91

Table 5

Means and Standard Deviations for Order

Solomon the Rusty Nail				The Legend of the Veery Bird			
Order	n	Mean	SD	Order	n	Mean	SD
1	17	4.16	1.94	1	17	6.00	3.90
2	16	5.81	2.51	2	17	4.41	2.20
3	15	4.38	1.13	3	17	4.57	3.26
4	12	5.16	3.04	4	12	4.34	3.09

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